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ABSTRACT

The preparation of a Master Plan for Environmental Education in New Jersey was one of six objectives with which the Council was established in 1967. Following a short narrative on the environmental crisis and the need for an environmentally literate citizenry, the Council's proposals are set forth: 1) establishment of a Department of Education Technical Advisory Committee on Environmental Education; 2) encouragement of local school district Concerned Citizens Committees on Environmental Education; 3) strengthening the network of Environmental Education Centers; and 4) support for the proposed legislation included. Emphasis is placed throughout on fostering greater use of the numerous learning environments existing outside books and classrooms. The above proposals are discussed, and several recommendations are made for strengthening and expanding environmental education at all levels, including the general public. Existing facilities and programs which provide various services on environmental education to school youth, teachers, and others are described. (JLB)

ED0 45478

MASTER PLAN FOR ENVIRONMENTAL EDUCATION

A Proposal For New Jersey

SP 000 337

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MASTER PLAN FOR ENVIRONMENTAL EDUCATION

A Proposal For New Jersey

A proposal prepared for

Carl L. Marburger
Commissioner of Education

by

The New Jersey State Council
for Environmental Education

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THE NEW JERSEY STATE COUNCIL FOR ENVIRONMENTAL EDUCATION
355 Route 46, Mountain Lakes, New Jersey 07046

The New Jersey State Council for Environmental Education, funded through the Elementary and Secondary Education Act of 1965, is administered by the Newark, New Jersey, Board of Education. Established in September, 1967, the Council was formed to achieve the following six objectives:

1. Develop an evaluation instrument for Environmental Education Programs.
2. Inventory all Environmental and Outdoor Education programs and sites in New Jersey.
3. Assess existing Title III projects in Environmental and Outdoor Education.
4. Determine whether inner city youth are being served.
5. Increase public awareness of the value of Environmental Education.
6. Develop a Master Plan for Environmental Education in New Jersey.

Representatives from the following state agencies and other organizations concerned with environmental education are constituted as the Board of Directors:

State Department of Agriculture
State Department of Community Affairs
State Department of Conservation & Economic Development
State Department of Education
State Department of Higher Education
State School of Conservation
N. J. Section of the American Camping Association
Public School Superintendents
State Colleges of New Jersey
Newark Public Schools
Title III Projects
Private - Parochial Schools
New Jersey Association for Environmental Education
U. S. Office of Education
Members at Large

A staff of five (three professional and two secretarial) is employed to carry out the activities of the Council.

THE ENVIRONMENTAL IMPERATIVE

Concern for the environment of man has become a dominant social issue of our time. The problem is no longer definable in the traditional terms of conservation or natural resources. It is now the quality of man's life. . . the livability of the environment, particularly the urban environment. The challenge is as vast as an atmosphere free of cancer producing chemicals, and as small as a child joyously playing in a stream of water free of disease bacteria and poisons. It is a basic reaffirmation of man's value and dignity, and promise that the future need not be more and more of worse and worse.

Much environmental legislation has been enacted in recent years. Departments and agencies have been restructured. Unfortunately, while the resulting programs have raised hopes for a better environment, improvement which can be seen, smelled, heard or tasted has not kept pace with ever accelerating environmental deterioration.

In essence, New Jersey is faced with a double dilemma; it is both the most highly urbanized and the most industrialized state in the country. Given the recent projections for population and industrial growth, it is difficult to see how the state's already stressed air, land, and water resources will support unlimited growth. New Jersey, as a microcosm of the entire country, shows abundant evidence of environmental breakdown. In the sphere of water pollution alone, the statistics are chilling. Each day the 750 sewage treatment plants throughout the state dump more than one billion gallons of inadequately treated wastes into our major drainage

basins. These and other effluents which finally move down to our coastal marshes have put a virtual end to a once thriving shellfish industry. A recent survey conducted by the United States Bureau of Sport Fisheries and Wildlife indicates that of fish and ducks sampled throughout the country, the highest DDT concentrations were found in New Jersey populations. One can only speculate whether this statistic carries over to our human population. Our state's environmental crisis is not limited to tangible pollution problems; it is also evidenced aesthetically, from disappearing green space, to web-like networks of power and utility lines, to billboard encroachment on most state and county highways.

The people are tired of the rhetoric of good intentions. While they willingly approve massive bond issues and pay higher taxes for open space acquisition and pollution abatement, they are increasingly marshalling determined and effective citizen opposition to highways, airports, and the loss of natural areas. They are being forced into positions of militancy, and leadership at every level of society is vulnerable to their righteous indignation.

The effects of this mounting environmental consciousness are predictable. Our great institutions, especially government, education, and business will be challenged to assert their leadership as agents of positive social change. They will be asked to provide constructive alternatives to the present course of society which appears inimical to life itself.

The Departments of Education and Higher Education have specific interest in improving education as a force for environmental quality. Education with its institutional network throughout the state reaches

the largest segment of the state's population in one place at one time. Already over 200 of our 596 school districts are actively engaged in environmental studies. Through several privately, state and federally funded supplementary education centers (more fully described in a later section of this proposal) environmentally oriented curriculum materials and teachers' guides have been prepared for many discipline areas and age groups. Much more remains to be accomplished, however.

To be effective, to be relevant, education must be able to enlist the resources of industry, of government, of the private sector. In curriculum development alone if education could obtain and translate into instructional materials the studies, plans, maps, laws, and legislation of the preceding groups, the result in the elementary classroom or the adult education lecture would be revolutionary. Students would be able to deal with the real problems and issues of their state and community, and the school as an artificial institution not within life but self-contained in its own world would cease to exist. It is in response to this growing challenge that the master plan was written.

The master plan is an evolutionary document. Its antecedents are those exceptional teachers and school systems of New Jersey which have already enriched their curricula and students through the conscious use of the environment as a teaching vehicle. It builds on their experience, their successes and failures.

The primary objective of the master plan is to create, in the most rapid and efficient way possible, an environmentally literate citizenry--a citizenry who understand their interdependence with and responsibility

for the total environment, and which possesses the knowledge and concern to solve existing problems and to prevent future ones. In the process, the master plan seeks to foster the greater use of the numerous learning environments which exist outside every textbook cover and schoolroom wall, and thereby to offer each citizen the deep satisfaction which comes from really sensing and understanding the daily flow of life around him.

The key to effecting change in educational procedures is educational leadership and commitment. In recent years the Commissioner of Education has initiated and authorized significant projects and activities related to environmental education. In view of the urgent need for immediate next steps, The New Jersey State Council for Environmental Education recommends that the Commissioner of Education review the master plan and implement its recommendations as soon as possible.

We propose: (1) establishment of a Department of Education Technical Advisory Committee on Environmental Education; (2) encouragement of local school district Concerned Citizens Committees on Environmental Education; (3) strengthening the network of Environmental Education Centers; and (4) support for the proposed legislation included in this master plan.

WHAT IS ENVIRONMENTAL EDUCATION?

"What are the specific tasks to be assigned to this new environmental/ecological education? They can be summed up briefly: awareness, concern, motivation and training:

Awareness of how we and our technology affect and are affected by our environment.

Concern for man's new and unique responsibility to re-establish and to create beneficially balanced relationships among all forms of life within the closed earth system.

Motivation and training to enable us to acquire and spread the knowledge and skills that will help us solve interrelated environmental problems and prevent their future occurrence."

James E. Allen, Jr.

"The aim of Environmental Education is to make use of the wealth of human and physical resources in every community which can reinforce and contribute to the learning process... to add understanding to the students' awareness of the variety and complexity of life around them... and, above all, to make the educational process relevant to the students needs, both immediate and future."

Edward J. Ambry

"Environmental Education seems to create a concern for all environment that leads to a commitment to preserve or develop optimum environment, and to improve less desirable environments. In addition, Environmental Education concerns itself with the learning environment; it seeks a commitment by educators to develop and utilize situations and conditions where learning can flourish."

V. Eugene Vivian

"Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution."

William B. Stapp

"Environmental Education is defined as that education which deals comprehensively with both human resources and conditions and natural resources and conditions...and their relation to each other - in other words, the total environment."

Somerset County Park Commission

Department of Education
TECHNICAL ADVISORY COMMITTEE ON ENVIRONMENTAL EDUCATION

The threat of destruction is imminent.

All over the state, citizens are exhibiting mounting environmental consciousness.

Education can be the most effective vehicle of positive change.

Education should assume its position of leadership in articulating a course of action to effect positive change.

The cooperation of industry, labor, government, and civic groups is needed to comprehensively effectuate this change.

The time to move is now.

A Technical Advisory Committee on Environmental Education should be established with its primary mission to advise the Commissioner of Education on the implementation of a state-wide environmental education program of action.

It would serve the Commissioner of Education by gathering vital information, reviewing Education Department efforts related to environmental education, and recommending a course of action based on the master plan and other data resulting from its deliberations.

This Committee should consist of twenty members. They will be appointed by the Commissioner of Education for three year terms.

Ten members would be appointed from such groups as:

State Department of Education

State Department of Higher Education

State Department of Conservation and Economic Development

State Department of Health

State Department of Transportation

State Department of Agriculture

Rutgers - The State University

Other New Jersey Colleges and Universities

County Superintendents of Schools

School Superintendents Association

Secondary School Principals Association

Elementary School Principals Association

Classroom Teachers Association

Private and Parochial Schools

Association for Supervision and Curriculum Development

Title III Environmental Education Projects

The other ten members would be drawn from the following sources:

Parents

College Students

Secondary Students

Board of Chosen Freeholders

Federated Boards of Education

Municipal Conservation Commissions

League of Municipal Governments

County Park Commissions

Citizen Service Organizations

Private Foundations

Business

Churches

News Media

Labor and Industry

Soil Conservation Districts

The Technical Advisory Committee on Environmental Education should address itself to the following

a. Review, with the Commissioner of Education, personnel in existing educational agencies on both the statewide and local levels and recommend effective means for their overall coordination.

b. Recommend more effective means for utilizing the personnel resources available within the educational community. (Soil conservation service, Agriculture Extension Agents, etc.)

c. Identify those personnel in the educational community who are responsible for major curriculum changes at the state and local levels.

d. Devise a means for effectively coordinating the capabilities of education agencies with those of business, civic groups and federal agencies based in the state.

e. Identify the amount and allocation of those financial resources of the state and federal government now allocated to existing environmental education centers; consider the need for new or improved fiscal arrangements.

f. Consider the establishment of additional regional environmental education centers and environmental education research and curriculum development centers throughout the state and devise appropriate legislation for their establishment and continuation.

g. Identify and assess the capabilities of other environmental resources and agencies within the state and recommend means for their coordinated utilization. For example, county park systems, municipal conservation commissions, representatives of local and county natural resource agencies.

h. Keep abreast of new sources of Federal-State financial assistance programs.

i. Review existing education programs at all levels to determine their present effectiveness and future potential for creating an environmentally literate citizenry; recommend a system to insure the constant flow of new materials into the school curricula.

j. Assess new and changing educational technologies for their potential use in environmental education programs.

k. Consider the establishment of a permanent Education Department Environmental Education Division to carry out the recommendations of the Technical Advisory Committee and the Commissioner of Education.

1. Devise a managerial plan and organizational structure for actuating a comprehensive state-wide environmental education program for all educational institutions; determine a feasible timetable for this effort.

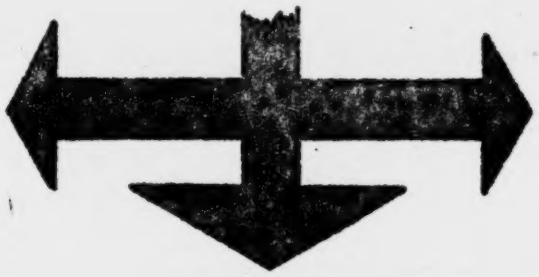
The Technical Advisory Committee on Environmental Education should prepare reports on its findings to be submitted to the Commissicner of Education at regular intervals. (monthly or bimonthly)

COMMISSIONER OF EDUCATION

TECHNICAL ADVISORY COMMITTEE ON ENVIRONMENTAL EDUCATION

Educators, Parents, and Students

(20 members) (3 year terms)



Review Education Department Personnel Assignments

Determine Effectiveness of Present Educational Efforts

Determine more Effective Utilization of Resources

Examine Importance Of New Educational Technology

Engage in Public Relations Activities

Recommend Establishment of Environmental Education Research and Curriculum Development Centers

Establish Channels for Dissemination

Recommend Implementation of a State-wide Environmental Education Plan

Propose Legislation

Identify Auxiliary State and Private Resources

Consider Feasibility of Establishing a Division of Environmental Education in the State Department of Education

Serve as a Technical Advisory Body to the Commissioner of Education

Seek Means for Additional Support for Environmental Education Centers

A BRIEF REPORT

ELEMENTARY AND SECONDARY EDUCATION

Discussion: To control an automobile at seventeen.....to direct the course of the nation at eighteen. Had New Jersey students gained their sufferage in the last election, how well would their elementary and secondary educations have helped them to achieve the perspective and maturity expected of an adult electorate?

One fact is certain. As a group, they are acutely aware of important social issues and understand that the realities of life often are not reflected in the formal curriculum. This growing awareness of the world around them,though it has fostered student discontent, unrest, and the cliche, "relevance," is a positive social value which education must recognize and build upon. The purpose of environmental education is to do just that....to make use of the wealth of resources in every community which can reinforce and contribute to the learning process....to add understanding to the students' awareness of the variety and complexity of life around them.

It has been ascertained through a statewide survey, that approximately 200 of the existing 596 school districts are involved in some type of Environmental Education program. The scope and extent of these programs vary considerably among the school districts. Some programs are of an isolated type, a one-exposure approach, and usually are terminal. Others are of longer duration and incorporate many grade levels which use school-

sites, parks, local fields and woodlands, solid and liquid waste disposal plants, town meetings, newspaper stories, and many other community resources in their environmental education studies. If school students, the future voting citizens, are to become involved as effective monitors and change agents of their environment, then the schools must provide more than a peripheral acquaintance with environmental problems. The school curriculum must be modified.

Recommendations: 1. The primary concern should be to make the school personnel more aware of the seriousness of current and future environmental problems and of education's role in the restoration of environmental quality. This task would be accomplished through a combination of workshops, conferences and film/slide presentations involving teachers, supervisors, administrators, and others.

2. An important aspect of a modified curriculum would be the application of student learnings from environmental education experiences to the solution of real environmental problems. Through field experiences with problem areas in the community or region, students could be involved with the source of the problem, its consequences and its possible solution. For example, a new type of homework could be assigned in which youth would involve parents and other adults in collecting data related to a local environmental problem leading to suggestions for its solution. Young people, working with Municipal Conservations Commissions and local Planning and Health Boards could have first hand experiences not available through the usual school curriculum. Students could measure pollution of air and water, predict the life expectancy of existing solid waste disposal areas, conduct

land-use surveys, study the history and design of zoning, health and conservation ordinances, evaluate present and predict future water-resource needs, and engage in many other real-life educational ventures.

The degree of direct involvement with a problem will be determined by the level of the school group in terms of academic achievement, grade, and reasonable proximity to the problem area. Field trips should include visits to industrial complexes, sewage treatment plants, polluted streams and lakes, farmlands where insecticides are either used or not used, as well as the traditional residence experiences at outdoor centers. Use should be made of the Environmental Study Areas newly established under the direction of the Secretary of the Interior, Walter Hickel, by the National Park Service. Urban districts should utilize the "vest pocket" parks and other surrounding small open space areas available in their communities.

3. An improved means of transmitting to schools information available in many state agencies, about environmental problems, should be developed. Many studies, reports,maps, plans and other data developed by various state agencies could become important, integral parts of the school curriculum if a method of continuous communication could be developed.

ADULT EDUCATION COURSES

Discussion: The adult education programs offered by many New Jersey communities provide an invaluable service to citizens who wish to continue and improve their education. Current courses cover a broad range of academic and leisure skill subjects, and community support for more diversified and

expanded programs is increasingly evident. The existing organizational and administrative bases for adult education are certainly adequate to handle greater public demand. In the case of communities which have not or cannot sponsor adult programs, neighboring districts are willing to enroll non-resident adults.

It is particularly important that the adult sector which controls the life of the community be reached. Environmental quality is a social problem which adults must be given the opportunity to learn more about if they are to exert effective leadership. Although the mass media have the ability to bring problems to the attention of the public, they cannot be expected to provide fundamental knowledge of environmental principles and processes which citizens must apply in their problem solving efforts. There is, therefore, a need at the community level for an adult oriented survey course on the environment--a course which begins with general principles and which progresses, through the use of local examples, to a consideration of the specific environmental issues of nation, state, and community.

Recommendations: 1. At a minimum, one survey course on the problems of the environment should be part of every adult education program. In the design and conduct of the course, use should be made of members of the community who, either by vocation or avocation, are involved in environmental affairs, for example: members of the municipal planning boards, and conservation commissions; representatives of local businesses and citizen action groups; resource specialists of federal and state government. Such personnel might be employed effectively as teachers or guest lecturers for the course.

2. If response to the survey course is favorable, it is recommended that additional courses of a more detailed and specific nature, such as community planning, pollution abatement, and general ecology, be designed and offered, either through the adult education program or through the extension and community service divisions of neighboring institutions of higher learning.

3. Adult Education administrators and staff should examine all course offerings in the adult education program and suggest that the use of environmental issues be incorporated as appropriate.

EDUCATION OF THE GENERAL PUBLIC

Discussion: Our society is dependent upon the mass media for much of its information, and the media represents one of the most effective and economical means of bringing environmental issues to the attention of the vast body politic. Continuous and reliable coverage of such issues is an important component of any overall plan to increase the public's awareness, knowledge, and willingness to act in the interest of environmental quality.

There are, of course, other productive methods of reaching the general public. Local sponsorshipof public forums, educational displays, and similar special events are a proven way of fostering public interest and support. Another example is the film "Later, perhaps", produced by the New Jersey State Council for Environmental Education. Highlighting the State's pressing environmental problems, the film reveals that at least some schools, through curriculum revision and the use of innovative teaching methods, are engaged in an effort to teach their students about man's dependence upon and

responsibility for the environment. The film finally suggests that the audience examine the programs of their own school systems for environmental content.

The means are immaterial, but the general public must be made knowledgeable if it is to understand and support the efforts of government and industry to restore environmental quality.

Recommendations: 1. The Technical Advisory Committee on Environmental Education should consider the development of a comprehensive state-level public education program, to keep the public continually informed of the environmental problems of state and community, and to foster increased citizen participation in the solution of such problems. This dissemination effort could include such vehicles as forums, lectures, magazines, newspapers, films, radio and television programs. The New Jersey Public Broadcasting Authority, launched in January, 1970, might be particularly valuable in this respect.

2. The Commissioner of Education and the Technical Advisory Committee should encourage the development of local public education programs. There is an infinite number of ways a local public education program could be conducted and it is worthwhile to mention a few.

Local newspapers should be urged to cover environmental issues and possibly even carry a weekly or bi-weekly column devoted to the environment.

Educational displays should be constructed and placed in local business establishments and public buildings.

Evening forums on local issues should be organized and speakers recruited from the ranks of local and county government, business,

county and local based governmental resource agencies, schools and colleges, civic and other groups.

Walking and driving tours of the local region should be developed to acquaint citizens with the environmental challenges and opportunities extant within their home communities. These tours, conducted on a bi-weekly or monthly basis, would identify specific environmental problems as well as follow through on their elimination.

3. Hopefully, these facets of a public education program would lead to corrective action on two fronts: to urge the general public to maintain awareness of environmental issues and the course of their alleviation; and to spur the contributors to local pollution and other forms of environmental deterioration, not the least of whom is the general public itself, to initiate and maintain measures eradicating the environmental problems lest further despoilation occurs.

LOCAL CONCERNED CITIZENS COMMITTEE

Discussion: As citizens become alerted to and concerned about the problems associated with the environmental crisis, they will demand greater participation in the decision-making process effecting solutions to these problems.

These citizens will also want to know what is being taught in the schools relative to environmental problems. They will naturally want young people to move into adulthood with a thorough understanding of the causes and consequences of the current problems, and their solutions. Inevitably, these citizens will want to insure that the school curriculum is relevant to the world that young people face, and will face.

Municipal Conservation Commissions, recommended by legislation enacted in 1968, are being formed throughout the state. Kindred groups, such as Survival, Inc., Friends of the Earth, and other environmentally related

organizations, have directed attention toward environmental education programs in the schools.

Recommendation: The Commissioner of Education should urge each school district to create a Concerned Citizens Committee on Environmental Education. This committee would serve as liason between environmentally related organizations, such as those mentioned above, as well as local established governmental agencies, and the local schools. This committee would also assist the school district in the study of local problems and in the development of pertinent curriculum materials. It would report regularly to the Superintendent of Schools, Board of Education, or a designated administrative staff member. Local businessmen, representatives of labor, government, industry, medicine, the clergy, conservation commission, school personnel, and others who are in a position to contribute services and advice for those planning programs in environmental education should be invited to serve on the Concerned Citizens Committee.

HIGHER EDUCATION

Discussion: College and university students have become increasingly concerned about the environment. The national teach-in (scheduled for April 22, 1970) will mark the beginning of a period of intense examination of environmental quality by the student body. There is little evidence, however, to show that our institutions of higher education are responding to the challenge of the environment in any planned manner, either at the undergraduate or graduate level.

In 1968 the New Jersey State Council for Environmental Education appointed an ad hoc committee to review this situation in the colleges and universities of the state. Generally, it found that environmental

understandings and issues are not being incorporated into general education and specialized curricula. When environmental quality was discussed, it was usually restricted to a few specialized and technical courses. An inter-disciplinary treatment of the subject was found to be a rarity. While the ad hoc committee recognized the need for highly specialized courses of study, it stated that there was a compelling need for a pre-professional and liberal arts program that would inform students of one of society's most pressing problems.

At Glassboro, Trenton and Montclair State Colleges, graduate programs have been established to prepare teachers as environmental education specialists. The initial programs were made possible by the Education Professions Development Act, which provided stipend support for experienced and prospective teachers and institutional assistance for each of the three colleges. This cooperative program has produced approximately forty graduates who have a master's degree in Conservation and Outdoor Education. Presently, seventy students are enrolled in similar, but non-federally supported, programs.

For nearly twelve years, teacher education students at the state colleges have spent five days in residence at the New Jersey State School of Conservation in Branchville. Attendance at the school was made a graduation requirement in 1957 by action of the State Board of Education. When the Board of Higher Education assumed control of the state colleges, this requirement was made optional. Presently, only students from Glassboro and Trenton State Colleges participate in the program. In addition, during their junior year practicum experience, Glassboro students are given an opportunity to work with and observe youngsters

at the Conservation and Environmental Science Center at Brown's Mills. Several State Colleges and Rutgers-The State University have offered in-service conservation and environmental education courses and workshops at various locations throughout the state. These courses are designed to acquaint teachers with environmental problems and to assist in curriculum development.

Recommendations: 1. The colleges, community colleges, junior colleges, and universities of the state should re-examine their existing statements of educational objectives to insure that the concept of harmony between man and environment is in some way expressed as an essential goal.

2. Each institution of higher learning should establish a faculty-student committee on environmental education. The purpose of the committee will be to explore and recommend desirable modifications of present course offerings and to develop new courses at the introductory and intermediate levels. The establishment of interdisciplinary courses on the environment should be especially encouraged.

The faculty-student committees should promote and facilitate independent study programs and similar course structures in which students would be able to work with local planning boards, health boards, conservation commissions, and similar entities. Such courses would not only be of tremendous assistance to local communities but would furnish students with invaluable experience and perspective.

3. Offerings at community and junior colleges should be expanded to include environmental education courses as a general or liberal education requirement, and also as terminal vocational training programs to prepare students as technicians to work in the emerging field of environmental quality.

RESOURCES AND FACILITIES FOR ENVIRONMENTAL EDUCATION

For the past twenty years, the State Department of Education, several State Colleges and some of the school districts have developed and initiated programs of instruction which use out-of-classroom learning techniques. A few programs became well established during the twenty year period, such as Ridgewood and Livingston Public School programs and the New Jersey State School of Conservation.

As school programs developed it became apparent that pre-service and in-service teacher education programs had to be designed to help teachers with subject content and methods of teaching in out-of-school situations. Several colleges responded by offering workshops and extension courses.

The State Colleges supported the program of pre-service and in-service education offered at the New Jersey State School of Conservation and this state operated facility has recently accommodated 4,500 college students, adults, teachers and 2,500 school pupils each year.

Through federal and state funding in Title III of the Elementary-Secondary Education Act of 1965 and its amendments, more than $1,000,000 has been alloted to develop additional centers for environmental education and teacher training.

Four centers, created through Title III are:

1. The Conservation and Environmental Science Center, a consortium of more than sixty school districts, located at Brown's Mills, has developed a capacity for originating and producing curriculum guides. This Center operates several college-sponsored teacher training courses which prepare teachers to use

these guides and to produce original material for environmental education in urban, suburban, rural and marine environments. In addition, the Conservation and Environmental Science Center maintains a one-day field study program in all seasons and a limited resident program in environmental education each week of the school year.

2. The Union County consortium of school districts has developed a day-use program at the "Deserted Village" site in Union County.
3. The Stepping Stone Environmental Education Center in Branchville has developed resident facilities, a resident program, a day-use and school-site visitation programs.
4. At Sandy Hook, the Middletown Township Board of Education operates a shore and marine center for environmental education for Middletown Township schools and Brookdale College.

In addition to the above centers, two local school district-based programs have been developed. One, at Madison Township, is entitled "A Classroom for Today's World," and the other in Trenton, is entitled "Action Bound."

County parks and museums, such as those in Monmouth, Bergen, Somerset, and Morris Counties have also developed day programs in conservation and natural history studies.

Schools and colleges have received much aid from the lectures and demonstrations provided by state and federal agencies. Staff members from state agencies such as the Division of Geology and Topographic Survey, Division of Fish and Game, and the Division of Forests and Parks have volunteered their services for school talks and demonstrations. The U.S. Soil Conservation Service and Rutgers University Extension Service have also contributed staff

time and expertise to school groups.

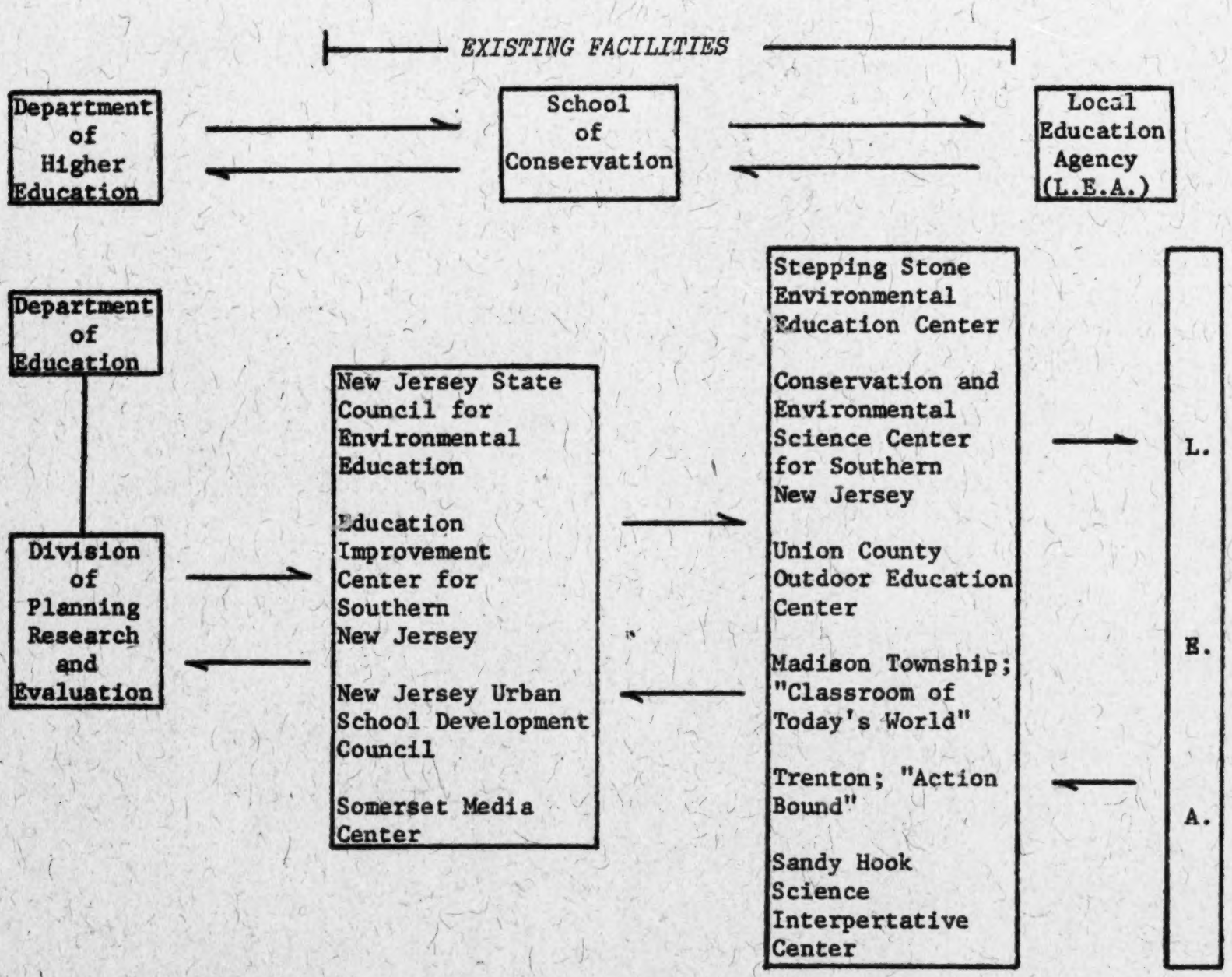
The Urban Schools Development Council, the Educational Improvement Center for Southern New Jersey, and the Somerset County Media Center, all initiated through Title III funding, have served and can continue to serve as clearing houses and dissemination units to assist educators and others. These supplementary education centers have developed a capability for creating curriculum materials and for making these materials available to the schools.

The efforts of all of these agencies have just made a beginning in helping schools to develop programs in environmental education at every level from Kindergarten through twelfth grade. A far more intense and far reaching effort in needed to make the K-12 environmental education programs a reality.

Especially needed are more materials for environmental education in a variety of urban situations. Nowhere is environmental quality more deteriorated than in urban areas, and nowhere is environmental education less developed.

All existing agencies and expertise must be strengthened, financed, and utilized to achieve the goal of environmental education for all citizens in New Jersey.

The facilities and programs briefly described above, form a network for programs and curriculum development, service to school youth and adults, teacher training capability, and an excellent means for dissemination. The graphic illustration on the back cover indicates this network of existing resources and facilities.


EXISTING FACILITIES
Department of Higher Education
School of Conservation
Local Education Agency (L.E.A.)
Department of Education
Division of Planning Research and Evaluation
New Jersey State Council for Environmental Education
Education Improvement Center for Southern New Jersey
New Jersey Urban School Development Council
Somerset Media Center
Stepping Stone Environmental Education Center
Conservation and Environmental Science Center for Southern New Jersey
Union County Outdoor Education Center
Madison Township; "Classroom of Today's World"
Trenton; "Action Bound"
Sandy Hook Science Interpertative Center
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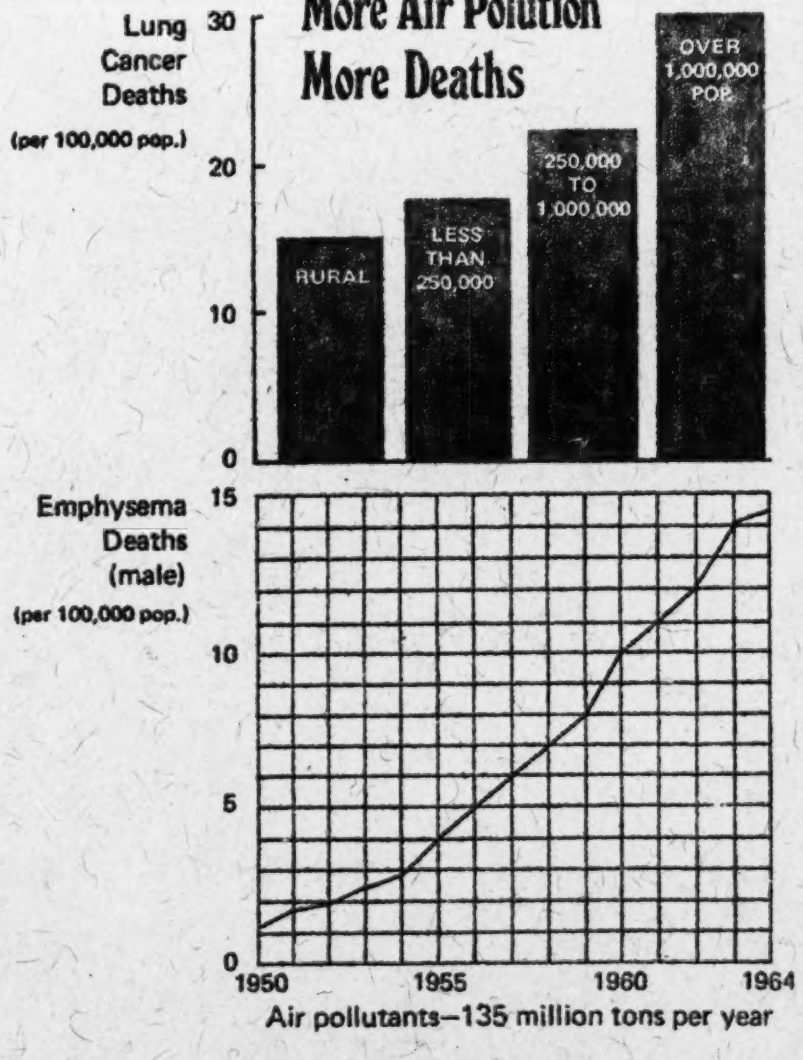
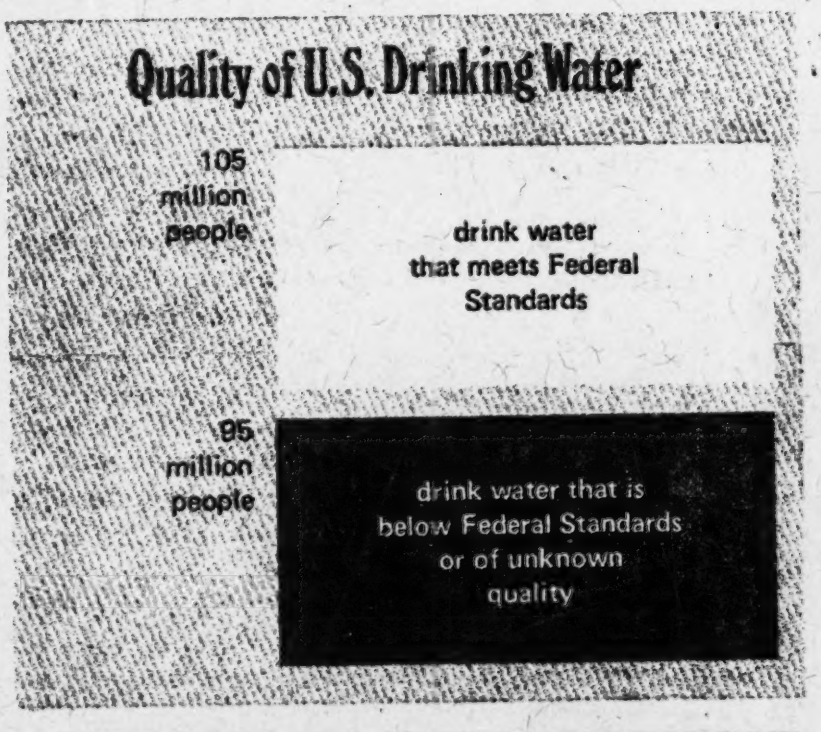
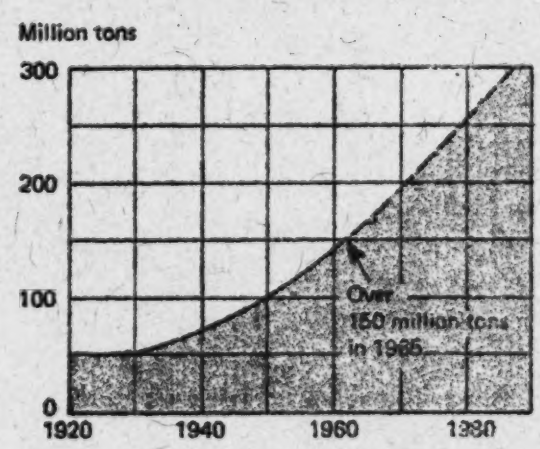
Bigger Cities More Air Polution More Deaths



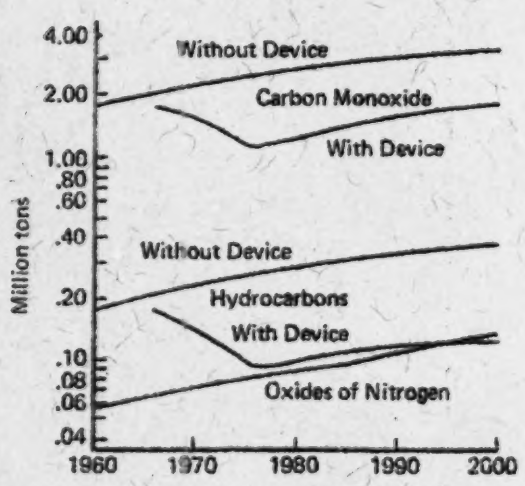
Quality of U.S. Drinking Water


105 million people
drink water that meets Federal Standards
95 million people
drink water that is below Federal Standards or of unknown quality

Solid Waste Production in the U.S.



Annual Motor Vehicle Emission



Source: *A Strategy for a Livable Environment*, U.S. Department of Health, Education, and Welfare, Washington, 1967.